

**PROCEDURES MANUAL
FOR
PLANNING AND IMPLEMENTING
WATER AND WASTEWATER PROJECTS
IN
KENTUCKY**

JANUARY 2003

COMMONWEALTH OF KENTUCKY



Acknowledgements

This document represents a true collaboration involving Kentucky's water and wastewater utilities, engineering firms, State and federal funding and regulatory agencies, legislative committees, local governments, the area development districts, local planning agencies, non-profit associations, and interested members of the general public. **Acknowledgement is given to the following entities for providing written comments, feedback at public meetings, and/or helping in the development and review of the *Procedures Manual*:**

Utilities: Beech Grove Water System; Bowling Green Municipal Utilities; Campbellsville Municipal Water/Sewer; East Daviess County Water Association; Edmonson County Water District; Frankfort Plant Board; Henderson Water Utility; Hopkinsville Water Environment Authority; Kentucky-American Water Company; Louisville Water Company; North Marshall Water District; Oak Grove Water Department; Owensboro Municipal Utilities; Paintsville City Utilities; Prestonsburg City's Utilities Commission; Princeton Water & Wastewater; Southern Madison County Water District; Union County Water District; Webster County Water District

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Kentucky League of Cities
Kentucky Rural Water Association

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This above acknowledgement should not be construed to imply agreement by all parties with all aspects of this Manual but, rather, their wiliness to participate in one or more of the various ways as cited.

Who Should Use This Document

Applicants seeking state or federal funding assistance are directed to participate in the Area Water Management Planning Council and comply with procedures set out in this document.

Utilities that finance projects with no state or federal funding assistance are not required to comply with these procedures. However, these utilities are *strongly encouraged* to participate in the regional planning activities of the Council and comply with these guidelines in the event that state or federal funding assistance may become necessary to reduce customer rates.

Please note that regulatory requirements cited in this document are relevant to all applicants/utilities regardless of funding source(s) for a project.

Information contained in this document is based on the best available information and the following State and federal statutory and regulatory citations: 40 CRF Part 15; PL 93-523; KRS 224; KRS 224A.111; KRS 224A.1115; 401 KAR Chapter 5; 401 KAR Chapter 8.

This document may be accessed via <http://wris.state.ky.us/kia> ; hard copies may be obtained by contacting:

Kentucky Infrastructure Authority
375 Versailles Road
Frankfort, KY 40601
Telephone: 502-573-0260
Email: Vicki.pettus@mail.state.ky.us

This document will be updated periodically to provide users the most current, accurate information for planning and obtaining funding for water and wastewater projects. Your feedback is encouraged and welcome.

Overview

Counties, cities, and water and wastewater utilities throughout the Commonwealth can apply to various federal and state funding agencies for financial help in building, upgrading or replacing service facilities. The construction and operation of these facilities must meet the requirements of state regulatory agencies. Funding and regulatory agencies have specific missions and, consequently, their program requirements vary.

The goal of this document is to achieve better communication and more effective coordination not only between government agencies and communities seeking to improve their water and wastewater facilities, but also among the regulatory and funding agencies themselves. The ***Procedures Manual*** will be an ongoing, collaborative effort of all stakeholders focused on simplifying and streamlining the process necessary for a community to plan for and obtain assistance for water and sewer projects.

The ***Procedures Manual*** is divided into three chapters: (1) The Planning Process, (2) The Implementation Process, and (3) Forms & Documents. The first two chapters describe the steps and tasks required from planning, through application, to construction. The last chapter includes copies of the actual forms and documents that may be used by applicants in accomplishing those tasks.

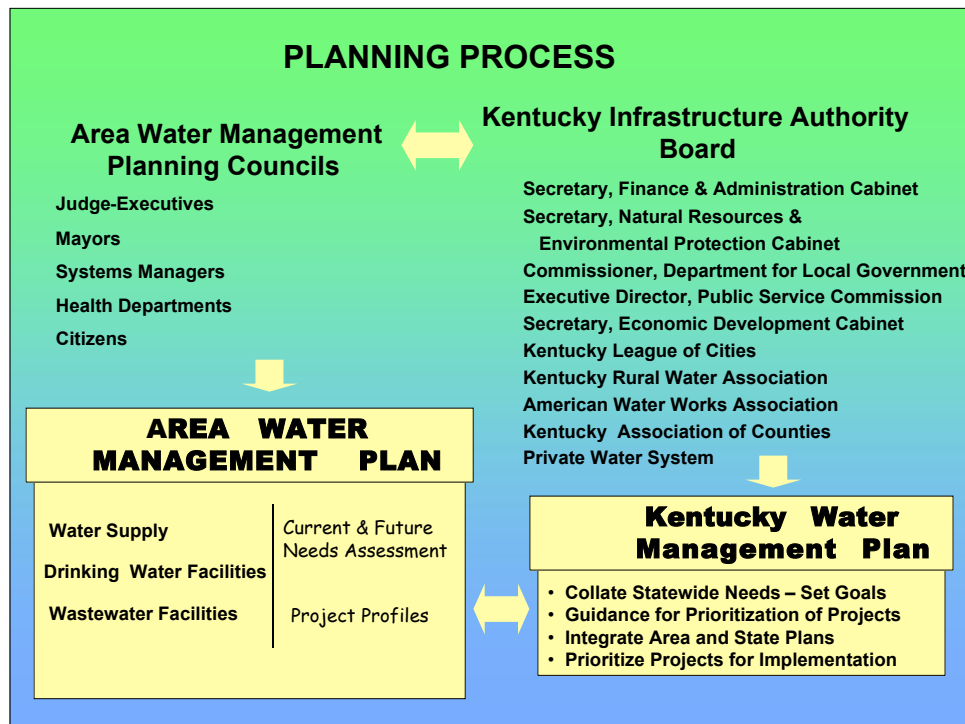
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**will be included in the near future

Chapter I. The Planning Process

- *Community-based Planning*
- *Area Water Management Planning Councils – Area Water Management Plans – Project Profiles*
- *Kentucky Water Management Plan*



Local Planning is Essential

In compliance with federal mandates, Kentucky State law (KRS 151, KRS 224, and KRS 224A) provides for regional water management planning relating to water supplies, drinking water facilities and wastewater facilities. When the need arises locally for a water or wastewater project to be initiated, the first step is community participation in ***community-based regional, strategic planning***.

Each proposed water or wastewater project in Kentucky must originate at the local community, and be considered in context with all other local and regional community needs, including human services, natural resources, transportation, economic development, agriculture, education, housing, historic and cultural assets, and governance.

The project then advances to a regional planning forum dealing specifically with water and wastewater, the **Area Water Management Planning Councils**. There are fifteen Area Water Management Planning Councils across the state, each involving the same counties as one of Kentucky's Area Development Districts (ADD). Each Council is staffed with a Water Service Coordinator, hired through the respective ADD. The Councils themselves are comprised of local elected and appointed officials and citizen members, as set out in KRS 224A.

Each Council is charged to develop an **Area Water Management Plan**, the *final* task of which is to identify proposed water and wastewater projects. The Area Water Management Plan contains essential information about the area's current and future water needs, and is the blueprint for three essential community services: water supply, drinking water, and wastewater. All of these services are studied and assessed by the Council in relation to the entire population within its region of the Commonwealth. The goal is to assure appropriate sharing of resources and attainment of economies of scale, and to achieve that goal while assuring responsiveness to local needs.

(See page 21 for contents of an Area Water Management Plan.)

The Project Profile

Each utility should devise an array of proposed projects to meet present and future needs. *[Note: Consultation with a professional engineer is very helpful in the planning process, and utilities may want to secure engineering services at this time. See procurement procedures outlined in Chapter II.]* Each proposed project is described as a "**project profile**," which is a compilation of a map as well as general information regarding the proposed activity. Each project profile is assigned a unique identifying number by the respective Area Water Management Planning Council. "WX " is the standard prefix for water projects and is followed by a multi-digit number. "SX" is the standard prefix for wastewater projects and is followed by a multi-digit number. Projects are grouped based on the expected time of implementation: within 0 - 2 years; within 3 -10 years; or within the 11 - 20 year period. An example of each type of project profile form may be found at the following sites:

Drinking Water Form: <http://wris.state.ky.us/ppform/PDFFormW.PDF>

Wastewater Form: <http://wris.state.ky.us/ppform/PDFFormWW.PDF>

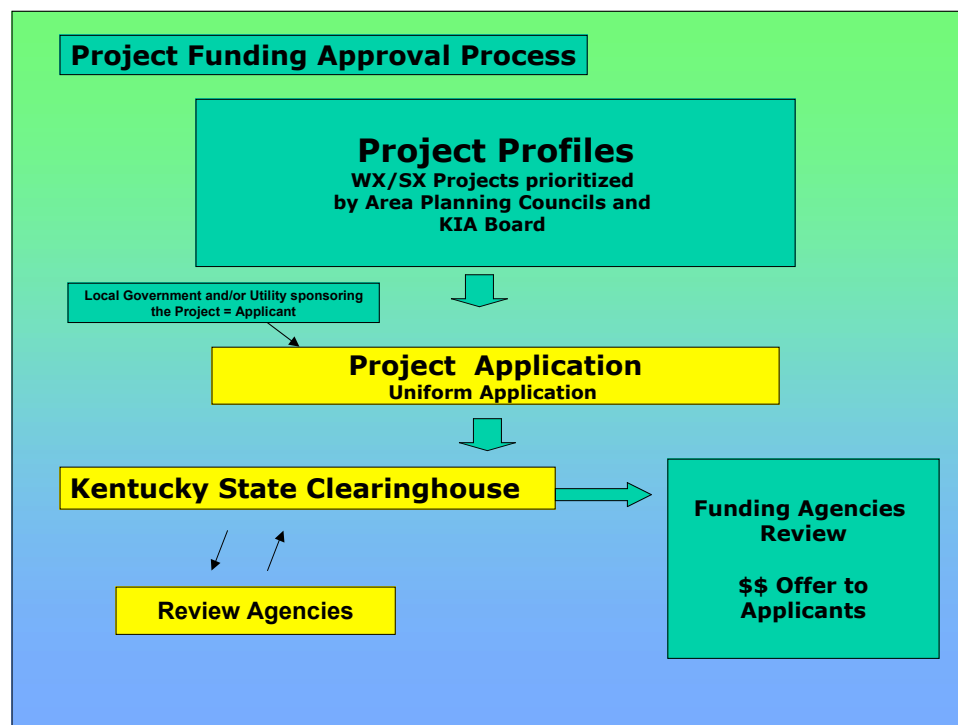
Each project profile approved by the respective Council is submitted to the Kentucky Water Resource Information System (**WRIS**), a comprehensive database of spatial (maps) and non-spatial information, including information on existing and proposed water and wastewater facilities statewide.

It should be noted that the project profiles may be downloaded for reference, but may only be submitted by the Councils via the Water Service Coordinator located at each ADD. Project profiles may be reviewed and updated at any time by an applicant utility through the Water Management Planning Council.

Information on each submitted project may be accessed via the internet at <http://wris.state.ky.us/website/watprop/viewer.htm>

The Statewide Perspective

Each Area Water Management Plan will be analyzed and incorporated into the statewide ***Kentucky Water Management Plan***. The Kentucky Water Management Plan serves as a guide and strategy for assessing future needs and for allocating funding for water and wastewater services throughout the Commonwealth. (See **page 29** for contents of the *Kentucky Water Management Plan*.)



Your active participation in the Area Water Management Planning Council will assure that the water and wastewater needs of all members of your community will be considered and balanced with the ultimate goal of providing and sustaining clean water for all Kentuckians.

IN SUMMARY, the planning process begins with a community-initiated project, and is presented to the Area Water Management Council in the form of a Project Profile. After approval by the Council, the Project Profile is assigned a unique identifier and is electronically submitted to WRIS via the Area Development District. At this point, the project is determined to be consistent with both the Area and the State Water Management Plan.

A full application for funding may then be submitted for review and consideration.

The application process – which involves Clearinghouse Review and, subsequently, funding agency review – is covered in **Chapter II: The Implementation Process.**

Chapter II. The Implementation Process

To move a project from the Project Profile to the point of full implementation, the following elements must be dealt with, usually in the order set out below.

- ***The Project Administrator***
- ***Procurement of Professional Engineering Services***
- ***Consultation with the Division of Water***
- ***Development of a Preliminary Engineering Report***
- ***On-line Submittal of Funding Application***
- ***State Clearinghouse Review (Ky Interagency Review Process, formerly known as A-95)***
- ***Funding Agencies Review***
- ***Environmental Review***
- ***The Project Team***
- ***Project Design & Approval***
- ***Competitive Bidding***
- ***The Role of PSC***
- ***Construction***
- ***Bringing the Facility On-line!***

The Project Administrator

Project administration is an extremely important element of any successful infrastructure project. Consequently, it is strongly recommended that a Project Administrator be a member of the Project Team. This individual will be responsible for assisting with procurement of all necessary services and gathering, collating, and presenting all appropriate information necessary for a complete project application. The individual will serve as the communications link between members of the Project Team, and as the principal point of contact for the agencies and the community regarding the project.

The Project Administrator must have a general working knowledge of the role and responsibility of each Project Team member, as his/her role is to keep all team members on task, secure additional local resources, and trouble-shoot whenever necessary in order to assure project completion within the planned timeframe. Other duties to be performed by the Project Administrator may include: setting up and maintaining project files; documenting Project Team

meetings; conducting and maintaining records of public meetings; preparing the Environmental Assessment; organizing the effort to secure easements and rights of way; and providing necessary clerical and support services as required.

The services performed by a Project Administrator are professional in nature and must be assigned by the Project Owner/Applicant to a qualified staff person with appropriate time to dedicate to the position or to an individual who specializes in this service. Most often these responsibilities are entrusted to a qualified individual secured either through the standard procurement process pursuant to KRS 45A or through an Area Development District.

(Note: It is the intent of the Kentucky Community Development Block Grant Program (CDBG) beginning in the FY 2004 Program Year to require anyone serving as a Project Administrator for a project that involves CDBG funds to be properly trained and certified through a CDBG training program. It is reasonable to expect other funding agencies involved with water and wastewater projects to do likewise and coordinate their efforts with the CDBG Program.)

Procurement of Professional Engineering Services

While engagement of professional engineering services is very valuable during the planning process, it is critical in the implementation phase of the project. **Professional engineering services** from a licensed individual or firm must be formally procured to provide, at a minimum, the following services:

- preparation of a preliminary engineering report
- technical advice and guidance
- assistance, as requested, in preparation of the Environmental Assessment
- design of the necessary facilities subject to the review and approval of the Division of Water, the Public Service Commission (if applicable) and other individuals or agencies which may have properties or facilities affected by the proposed project (e.g., landowner, Kentucky Transportation Cabinet, etc.)
- actions necessary for securing all permits
- development of bid documents
- provision of services during construction
- provision of on-site inspection during construction

Tasks involved in obtaining professional engineering services are outlined below.

1. Regulatory Requirements for Procurement

There are specific procedures which a Kentucky city, county, or water utility must follow in procuring engineering services. Engineering services typically must be procured by the applicant for each distinct project to be developed. Local policies regarding procurement must be consistent with those set out in the KRS 45A (the Kentucky Model Procurement Code), as well as other applicable federal requirements. KRS 45A may be found at the following website: <http://162.114.4.13/KRS/045A00/CHAPTER.HTM>

2. Standard Engineering Contract

Each distinct water or wastewater project requires a separate contract for engineering services. The standard form of engineering contract presented in the **Forms & Documents** section of these Procedures contains the basic required elements that cover nearly every type and size of water and wastewater project in Kentucky. This form has been approved and accepted by all funding agencies and all applicants are strongly encouraged to use this form.

If an applicant determines that an alternative form of engineering contract is in **its** best interest for a specific project, review and approval must be obtained from each of the respective funding agencies that are supporting the project.

(See page 32 for the Standard Engineering Contract form.)

3. Schedule of Fees and Charges

When federal or state funding is used in addition to local funding in a utility's project the actual amount to be paid to an engineer or engineering company for specified engineering services, regardless of fund source, is limited. The published fee schedule for engineering design and inspection services for water and wastewater projects is provided in the **Forms & Documents** section and must be used by the applicant. The schedule is identical to that used by the Rural Utilities Services (USDA).

(See page 45 for the required Engineering Fee Schedule)

Consultation with the Division of Water

A preliminary meeting with Division of Water is mandatory for those projects that involve:

- Developing a new raw water source
- Constructing or expanding a water treatment plant
- Constructing or expanding a wastewater treatment plant
- Interconnecting two existing water treatment systems

This meeting will help both the applicant and DOW understand the scope of the project and develop a logical plan of action to move the project through the technical review process.

Key contacts within the Division of Water:

For water supply projects:
Leon Smothers, Branch Manager
Water Resources Branch
14 Reilly Road
Frankfort, KY 40601
Telephone: 502-564-3410
Fax: 502-564-9003
e-mail: Leon.smothers@mail.state.ky.us

For drinking water projects:
Vicki Ray, Branch Manager
Drinking Water Branch
14 Reilly Road
Frankfort, KY 40601
Telephone: 502-564-3410
Fax: 502-564-5105
e-mail: Vicki.ray@mail.state.ky.us

For wastewater projects:
Bill Gatewood, Branch Manager
Facilities Construction Branch
14 Reilly Road
Frankfort, KY 40601
Telephone: 502-564-3410
Fax: 502-564-2741
email: bill.gatewood@mail.state.ky.us

The Preliminary Engineering Report

The ***preliminary engineering report (PER)*** is a document or electronic file, containing maps, photos, and other graphic illustrations together with narrative statements and mathematical calculations necessary to adequately depict the existing situation or problem, analyze alternatives, and support a specific course of action to address the situation or problem. Sufficient information must be provided to adequately assess the need for, as well as the feasibility and cost of the project. The engineer should provide thorough documentation, using technical supporting information (reports, studies, lab analyses, etc.). Engineers are required to *cite and reference* supporting technical information and summarize the data as appropriate, rather than attaching lengthy technical documents. Similarly, the report should reference information and recommendations contained in the Area Water Management Plan, which supports the proposed project activity.

The standard format for a preliminary engineering report or on any water or wastewater project in Kentucky may be found in the **Forms & Documents** section. This outline delineates information that must be included, at a minimum, in the PER. In order to facilitate the review of the PER, strict adherence to the format presented in the outline is required. The PER must be prepared by a professional engineer licensed to practice in Kentucky. If the information required by the PER outline is not provided, an application will not be reviewed further until deficiencies in the PER are corrected.

(See page 48 for the PER content and format.)

[Note: For wastewater projects, the requirement for a PER may be satisfied if there is already a Regional Facilities Plan for the area, approved by Division of Water per 401 KAR 5:006. Please check with the Division to make sure that the Regional Facilities Plan is up to date and approved.]

On-line Submittal of Funding Application

To apply for federal or state agency funding assistance for a water or wastewater project, the **Kentucky Uniform Funding Application** must be submitted to the State Clearinghouse via a web-based form. ***[The electronic form will be available 5/03. Prior to the electronic form becoming available, applicants should continue to use the application forms prescribed by each of the funding agencies.]***

Much of the basic information required in the funding application will be transferred electronically from the Project Profile when the WX/SX number is entered. Therefore, the applicant is advised to verify current information and/or update the Project Profile before submitting an application. Note that substantial changes to the profile must go through the Area Water Management Council and changes may only be submitted by the Area Development District staff working with the Council. The draft on-line application form may be found at the following website: <http://wris.state.ky.us/kia>.

Requirements for using the electronic Uniform Application: A PC and Internet Explorer browser 6.0. The browser is available free and may be downloaded off of the internet at:
www.microsoft.com/windows/ie/downloads/critical/ie6sp1/default.asp

State Clearinghouse Review & Endorsement

(Ky Interagency Review Process, formerly known as A-95)

The **State Clearinghouse** serves as the single point of entry for all proposed water or wastewater projects in Kentucky. The Clearinghouse is physically located in and staffed by the Department for Local Government. When an application is received into the Clearinghouse database, it is directed to many designated review agencies for comment. It should be noted that the agency review, at this point, is a compliance check only and is preliminary to the more in-depth NEPA-like Environmental Review which is required for a project **when federal funds are involved** (see *Environmental Review* below). If the application does not contain sufficient information for an agency review, the review process will be suspended until the applicant sends in the required information.

Once the review agencies have completed their review, comments are sent back to the Clearinghouse. All comments are collated and sent to the applicant, along with a letter indicating whether the project is “endorsed.” If the project is not endorsed, the applicant must resolve the conflict and resubmit the application. If the project is “endorsed,” the Clearinghouse forwards the application to all funding agencies dealing with water or wastewater. This process will be done electronically, effective 5/03, and will help to reduce the amount of paperwork and review time at the State level.

*(See **page 55** for more details on the Clearinghouse Review process)*

[Note that the Clearinghouse endorsement of a project application does not obligate either the Clearinghouse or any funding agency to provide the funding requested by the applicant. A critical step in any application for KIA funds is approval by the KIA Board. The Board meets every monthly, at which time projects are presented. Once approved, projects are submitted to the Capital Projects and Bond Oversight Committee, a standing committee of the State Legislature, for review. This Committee also meets monthly.]

Funding Agencies Review

The **Funding Agencies Review** is done by each federal and state funding agency to determine if the applicant/project is eligible and has access to sufficient fiscal resources to complete the project. Once the Clearinghouse Review Process becomes electronic, the funding agencies will be able to see the progress of the project while it moves through the Clearinghouse.

After the Clearinghouse endorses the project, each funding agency will be able to indicate electronically whether it has the appropriate or available funds to offer the applicant. Collaboration by the funding agencies will expedite the funding process and save the applicant from having to “shop around” for dollars from each agency. Once funding source(s) have been determined, the applicant will be contacted directly and will work throughout the process with those funding agencies which can participate. Without obligation, the State and federal funding agencies may recommend that the applicant proceed with an Environmental Review and Project Design.

Environmental Review

For any project involving federal dollars, an in-depth Environmental Review must be performed to determine if environmental resources could be impacted by the proposed project. An Environmental Review is the term for the formal process based on the guidelines of the National Environmental Protection Act (NEPA). **For projects involving federal funding**, the

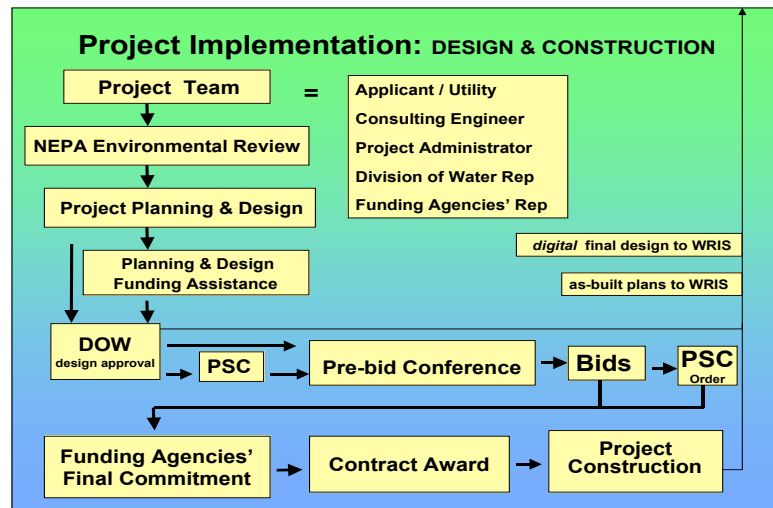
Environmental Review must be completed before the application may move forward.

(See **page 57** for the *Environmental Review documents*.)

The Project Team

After a project application has received endorsement by the State Clearinghouse, after funding has been conditionally committed, and after the NEPA-like environmental review has been completed, a **Project Team** should be assembled to work with the project from plan design to construction.

The Project Team should include the owner, the project administrator, the consulting engineer, a representative from DOW and a representative of the funding agencies.



The Project Team will be responsible for the following tasks:

- Hold regular meetings to delegate tasks, set timelines for completion of the application, and report progress.
- Interface with NREPC and funding agencies to make necessary corrections to the final application, as required.
- Assure that the applicant is in full compliance with all State and local regulations, including environmental regulations. If outstanding violations exist, the Project Team should communicate directly with the regulatory agency and take immediate steps to achieve compliance

- Assure that the applicant-system complies with the Kentucky Uniform System of Accounting and Reporting, and conforms to a user charge system based on the actual cost of providing services. This would include: debt service charges, charges sufficient to cover cost of operation and maintenance, and replacement reserve.
- Oversee the development and passage of a system use ordinance in the appropriate jurisdiction and/or affected service area of the project.
- Notify the funding agencies when a project is substantially complete and advise of the final loan amount necessary for project completion.

Project Design & Design Approval

Design considerations for sewer lines and wastewater treatment plants may be found in State regulation 401 KAR 5:002 and 402 KAR 5:005. Design considerations for drinking water systems may be found in State regulation 401 KAR 8:100. The regulation covers all of the requirements for submittal to the Division of Water, along with time frames for review and approval.

The Division requires that plans and specifications be prepared and submitted by a professional engineer registered in Kentucky, and must bear the engineer's seal. Project design documents must have obtained Division approval before the applicant may begin the competitive bidding process.

For complete information on water and wastewater design requirements, please visit the Division of Water websites listed below.

For water supply projects:

<http://water.nr.state.ky.us/wr/dwwr.htm>

For drinking water projects:

<http://water.nr.state.ky.us/dw/default.htm>

For wastewater projects:

<http://water.nr.state.ky.us/dow/dwfac01.htm>

Competitive Bidding

After the project design has been approved by the Division of Water and the funding agencies, as required, the applicant may proceed with advertising construction contracts for bid. As with the procurement of professional engineering services, the bidding process must comply with KRS 45A (Kentucky Model Procurement Code), and applicable federal requirements. The Code may be found at the following website:
<http://162.114.4.13/KRS/045A00/CHAPTER.HTM>,

At a minimum, the applicant must prepare and maintain for approval the following:

- Copy of advertisement as it appeared in the media
- Ranking of firms and certified bid tabulation
- Record of project-specific discussions with bid process respondents
- Letters of formal termination to unsuccessful firms
- Certification letter on attorney letterhead

The Role of PSC

The Public Service Commission regulates the rates and services of water districts, water associations, and privately owned water and sewer utilities. Before these utilities may issue any long-term debt or adjust their rates, they must obtain Commission approval. They must also obtain a certificate of public convenience and necessity prior to beginning construction of any project.

Commission review encompasses a review of the utility's present revenues and expenses and a determination of the rates necessary to support the proposed construction and the proposed loan or bond repayment. The Commission also examines the general need for and the technical feasibility of the proposed project. Generally utilities apply to the PSC for approval of proposed projects after receiving DOW approval of the project designs. While PSC review is pending, utilities will request bids on the proposed project. The PSC uses the final bids to determine project costs, establish rates and the reasonableness of proposed financing.

(It should be noted that for projects involving Rural Development or Housing and Urban Development financing, KRS 278.023 requires the PSC to accept and approve the proposed construction and financing within 30 days of a properly filed application. In these instances, PSC review is strictly limited.)

Construction of the Project

After the contract for construction services has been properly bid and awarded, the applicant must arrange for a pre-construction and management conference to be held with the Project Team. Throughout the construction phase, on-site construction inspections will be made by the Project Team, therefore it is important to include the contractor or project foreman as part of the Project Team. Invoices from the contractor must be reviewed and approved by the engineer before presentation to the owner for approval and subsequent submittal for payment.

Bringing and Keeping the Facility Online!

The most rewarding step in implementation will be actually bringing the facility or project online. Yet, the work is not yet done. The most critical period in your project is the “breaking-in time” while the project is still under warranty. **The Project Team should remain active** in order to maintain and aggressively pursue correction of any and all items that do not meet design specifications or operating standards. Further, the project should be monitored continuously to make sure that the operations are remain in compliance with State and local regulations.

Participating Regulatory and Funding Agencies

Regulatory Agencies

Ky State Division of Water, NREPC
Ky Public Service Commission
U.S. Environmental Protection Agency

Funding Agencies

Appalachian Regional Commission
Delta Regional Authority
Ky Department for Local Government (Community Development Block Grant Program)
Ky Division of Abandoned Mine Lands
KY Economic Development Cabinet
Kentucky Infrastructure Authority
PRIDE (Bluegrass and Eastern Kentucky)
U.S. Economic Development Administration (U.S. Department of Commerce)
U.S. Environmental Protection Agency
U.S. Rural Utility Services (Rural Development Administration, USDA)

Forms and Documents
for
Planning and Implementing
Water & Wastewater Projects in Kentucky

Documents for the Planning Process

- **Area Water Management Plans
Required Content**

Each Area Water Management Council is charged with developing a comprehensive **Area Water Management Plan**. The Plan shall include the concerns of all citizens in the planning area, and shall act for the benefit of ratepayers by seeking all reasonable economies of scale offered by regional planning. The Plan shall be used by local and State decision makers to determine the best allocation of fiscal resources for infrastructure projects.

The content of an Area Water Management Plan combines three major planning efforts which have heretofore been separate exercises: planning for water resources (supply); planning for drinking water facilities; and planning for wastewater (sewer) facilities. While various chapters (listed below) correspond to each of the three areas of planning, the Area Water Management Plan reflects an analysis of all three elements in order to identify needs and to provide for comprehensive coverage of the area's water and sewer needs.

The scope of the area plan allows local communities to meet federal and state legislated planning mandates and requires a high degree of collaboration between state regulatory agencies as well as state and federal funding agencies. All of these agencies are involved in the development and improvement of water and wastewater infrastructure. Reflecting the sensitivity and dynamism of our natural environment and the need to respond quickly to the ever-changing demands of the human community, the planning process is truly continuous. Consequently, each Council is required to update components of its Area Water Management Plan annually.

Required Content & Format for Area Water Management Plan

I. DESCRIPTION OF THE PLANNING UNIT

- A. Description & Determination of the Planning Unit
- B. Water Management Areas - Water Planning Unit Map
- C. Current Water Service Areas - Water Service Area Map
- D. Proposed Water Service Areas - Water Service Area Map
- E. Future Water Service Areas – Water Service Area Map
- F. Wastewater Management Areas – Wastewater Planning Unit Map
- G. Current Wastewater Service Areas – Wastewater Treatment Areas Map
- H. Proposed Wastewater Service Areas – Wastewater Treatment Areas Map
- I. Future Wastewater Service Areas – Wastewater Treatment Areas Map

II. PLANNING COUNCIL

- A. Planning Council members
- B. Planning representatives and aides
- C. Description of planning representation selection
- D. County Advisory Group(s)

III. COUNCIL MEETING DATES, PUBLIC NOTICES

IV. COUNCIL OBJECTIVES AND WORK PLANS

- A. Planning objectives
- B. Planning process to set objectives
- C. Conflicts or lack of consensus
- D. Conflicts with existing or proposed plans of local entities

- E. Existing water or water-related plans
- F. Work Plan: Objectives and Deadlines

V. WATER USE

- A. Public Water Systems (community & non-community)
- B. Private Domestic Water Systems
- C. Current and Projected Population in planning unit
- D. Current Water Use
- E. Projected Water Use

VI. WATER SOURCES

- A. Map of all sources
- B. Surface Sources/Springs
- C. Groundwater Sources
- D. Other Sources
- E. Source water assessments
- F. Water Use Constraints

VII. WATER SUPPLY ADEQUACY

- A. Summary of Water Systems in the Region
- B. Drought susceptibility of water systems

VIII. SOURCE WATER PROTECTION

- A. Delineation
- B. Watershed Protection Areas
- C. Reservoir Protection Areas
- D. Wellhead Protection Areas

- E. Recharge Protection Areas
- F. Water Supply Risks

IX. WATER RESOURCES INVENTORY

- A. Soils Map
- B. Gaging Stations
- C. Wetlands
- D. Hydric soils
- E. Outstanding Resource Waters
- F. Generalized land use
- G. Mine works
- H. Geology
- I. Cultural/Archeological areas
- J. Ground-water areas
- K. Recreational water resources
- L. Streamflow data
- M. Precipitation data
- N. State and Federal Requirements
- O. High-yield Wells
- P. Water quality
- Q. Ground Water
- R. Dam and Reservoir Ownership
- S. Sources of Water Resources Data

X. WATER SUPPLY ALTERNATIVES

- A. Sources
- B. Conservation/Demand reduction
- C. Loss reduction
- D. Regionalization
- E. Interconnections

XI. PRIMARY WATER SUPPLY ALTERNATIVE

- A. Description of preferred alternative
- B. Decision-making process
- C. Summary of issues and discussions
- D. Public notices
- E. Required capital improvements

XII. EMERGENCY PLANS

- A. Water Shortage Response Plan
- B. Supply Contamination Response Plan
- C. Alternative Water Sources

XIII. WATER TREATMENT, DISTRIBUTION & ASSESSMENT

- A. Existing facilities and infrastructure
- B. Treatment capacity/adequacy existing/future
- C. Distribution System
- D. Storage capacity existing/future
- E. Intakes
- F. Pumps
- G. Meteres

- H. Unserved & underserved areas & service area expansions
- I. Private domestic systems
- J. Non-community systems

XIV. TECHNICAL CAPACITY OF PUBLIC WATER SYSTEMS

- A. Adequate water existing/future needs
- B. Consistent high-quality water
- C. Adequate pressure
- D. Unaccounted for water not excessive
- E. Emergency sources

XV. MANAGERIAL CAPACITY OF PUBLIC WATER SYSTEMS

- A. Management & business plans
- B. Compliance record
- C. Customer complaints & followup
- D. Board activities
- E. Staffing
- F. Costs of production
- G. Water loss audits
- H. System maintenance

XVI. FINANCIAL CAPACITY OF PUBLIC WATER SYSTEMS

- A. Uniform System of Accounting
- B. Cost-based rates

XVII. WATER SUPPLY ISSUES/PROJECTS

- A. Project Listing
- B. Planning area supply or infrastructure project issues

XVIII . WASTEWATER TREATMENT

[Note: Data and information – both non-spatial and spatial – contained in Chapter 18-25 constitute the planning components of a Regional Facilities Plan. This information, together with additional engineering analyses, fulfills the regulatory requirements (401 KAR 5:006) for a Regional Facilities Plan.]

- A. Designation/Mapping of Planning Area
- B. Planning Area Overview

XIX. EXISTING WASTEWATER FACILITIES IN PLANNING AREA

- A. Municipal Wastewater Systems
- B. Package Treatment Plants
- C. Onsite Wastewater Treatment Systems
- D. Other Permitted Dischargers
- E. Stormwater Management
- F. Agricultural Run-off

XX. PLANNING AREA CHARACTERISTICS

- A. Wetlands
- B. Delineation of 100 year floodplain
- C. Topography/influence of topography on on-site sewage disposal systems
- D. Groundwater
- E. Surface streams
- F. Geology
- G. Soils, suitability/unsuitability
- H. Other significant characteristics

XXI. DEMOGRAPHIC CHARACTERISTICS OF PLANNING AREA

- A. Current population for areas served by collector, package/cluster, onsite, other
- B. Project population for areas served by collector, package/cluster, onsite, other for 0-2, 3-10 and 11-20 year time frames

XXII. BEST ALTERNATIVES FOR WASTEWATER SERVICES IN PLANNING AREA

- A. Overview
- B. Municipal Wastewater Systems
- C. Package Treatment Plants
- D. Onsite Wastewater Treatment Systems
- E. Industrial wastewater treatment
- F. Stormwater management
- G. Agricultural Runoff

XXIII. DESIGNATION OF MOST APPROPRIATE WASTEWATER SERVICES AREAS/PROVIDERS IN PLANNING AREA

- A. Discussion
- B. Mapping

XXIV. WASTEWATER PROJECT PROFILES

- A. Discussion
- B. Mapping & Reports

XXV. PUBLIC PARTICIPATION

XXVI. IMPLEMENTATION PLAN FOR WATER & WASTEWATER

- A. Future activities
- B. Project prioritization
- C. General conclusions
- D. General recommendations
- E. Council approval

APPENDICES

- **The Kentucky Water Management Plan**

Kentucky Water Management Plan

- **Summary & assessment of Area Plans**
- **Identification of statewide needs**
- **Critique of needs: possible mergers, consolidations, regionalism**
- **Recommendations for systemic changes to meet statewide needs**

The **Kentucky Water Management Plan** serves as a blueprint for the entire State's water and wastewater planning. The statewide plan incorporates the contents of each Area plan, and provides an analysis of water and wastewater service "gaps." Thus, the statewide Plan lays out a guide and strategy for current and future needs for all Kentuckians.

An outline of the Contents for the Kentucky Water Management Plan follows.

Contents of Kentucky Water Management Plan

EXECUTIVE SUMMARY

Through maps, charts, tables, and brief narrative, the Kentucky Water Management Plan summarizes into a statewide perspective the information contained in the Area Water Management Plans.

I. INTRODUCTION

- A. The Planning Process
- B. The Water Resource Information System

II. SUMMARY OF EXISTING SYSTEMS

- A. Overview of water and wastewater systems
- B. Physical Plant

III. ASSESSMENT OF SERVICE

- A. Water Resources
- B. Treatment Capacity
- C. Management
- D. Finance

IV. REGIONAL NEEDS AND PRIORITIES

- A. Breakdown of proposed projects by type, cost, area served, etc.
- B. Regional Summaries
 - 1. Physical Plant
 - 2. Management
 - 3. Financial
 - 4. Regionalization
 - 5. Support for very small and domestic systems

V. STATEWIDE ISSUES

- A. Statewide goals
- B. The Planning Process
- C. Management issues
- D. Financial issues
- E. Prioritization Process for Proposed Projects

VI. RECOMMENDATIONS

- A. Organizational structures/delivery systems
- B. Operations
- C. Management
- D. Finance
- E. Funding

Information for the Implementation Process

- **The Project Administrator**

The applicant should refer to KRS 45A, ***Kentucky Model Procurement Code***, for specific requirements for procurement of a Project Administrator. The Code may be found at the following website:
<http://162.114.4.13/KRS/045A00/CHAPTER.HTM>

Note: Services may be procured from a unit of government via negotiation.

- **Professional Engineering Services
Standard Engineering Contract**

1. **Procurement Procedures**

The applicant should refer to KRS 45A, ***Kentucky Model Procurement Code***, for specific requirements for procurement. The Code may be found at the following website: <http://162.114.4.13/KRS/045A00/CHAPTER.HTM>

In addition, the Division of Water has a guidance document for Engineering Procurement and Contract Review Procedures that may be obtained by calling their offices at 502-564-3410 or by visiting their website at: <http://water.nr.state.ky.us/dow>.

2. **Standard Engineering Contract and Fees Schedule for Services**

The next few pages contain the following items:

- Sample standard engineering contract
This document contains all of the basic, required elements you will need to include in an engineering contract. Should you elect to use another contract form, please be sure to include the same content contained in the sample. Also, note that all owner-engineering contracts are subject to funding agency approval.
- Fee schedule for engineering contract
The fee schedule contains all of the based and required elements. If another contract is used, you should be sure that all elements are covered. The fee schedule included must be part of the contract. The fee scheduled sets out the actual amount to be paid to an engineer or engineering company for design and inspection services. Fees for other services are negotiated between the owner and the engineering firm, subject to funding agency approval.

Standard Engineering Contract

AGREEMENT FOR ENGINEERING SERVICES

This agreement, made this *(date)* day of *(month)*, 200____, by and between *(name and address of owner)* hereafter referred to as the OWNER, and *(name and address of engineer or firm)*, hereafter referred to as the ENGINEER.

The OWNER intends to construct a *(describe project)* in *(name of County)* County, Commonwealth of Kentucky, which may be paid for in part with financial assistance from the funding agency(ies) associated with this project, which includes *(list specific funding agencies)*, and for which the ENGINEER agrees to perform the various professional engineering services for the design and construction of said system.

The ENGINEER, by signature on this contract, verifies that it holds an individual licensure in good standing with the Kentucky Board of Registration for Professional Engineers and Land Surveyors; has a firm licensure in good standing as an Engineering company in Kentucky, if work is to be accomplished other than as a sole practitioner; and has coverage under a license to do business in *(name of County)* County.

WITNESSETH: That for and in consideration of the mutual covenants and promises between the parties hereto, it is hereby agreed:

SECTION A - ENGINEERING SERVICES

The ENGINEER shall furnish engineering services as follows:

1. The ENGINEER will conduct preliminary investigations, prepare preliminary drawings, provide a preliminary itemized list of probable construction costs effective as of the date of the preliminary report, and submit a preliminary engineering report following instructions and guides for Kentucky Preliminary Engineering Report, incorporated here by reference.
2. The ENGINEER will furnish 10 copies of the preliminary engineering report, and layout maps to the OWNER.
3. The ENGINEER will attend conferences with the OWNER, representatives of funding agency(ies), or other interested parties as may be reasonably necessary.
4. After the preliminary engineering report has been reviewed and approved by the OWNER and by other funding agencies, and the OWNER directs the ENGINEER to proceed, the ENGINEER will perform the necessary design surveys, accomplish the detailed design of the project, prepare construction drawings, specifications and contract documents, and prepare a final cost estimate based on the final design for the entire system. It is also understood that if subsurface explorations (such as borings, soil tests, rock soundings and the like) are required, the ENGINEER will furnish coordination of said explorations without additional charge, but the costs incident to such explorations shall be paid for by the OWNER as set out in Section B hereof.
5. The contract documents furnished by the ENGINEER under this Section shall utilize funding agency-endorsed construction contract documents, including General Conditions,

Contract Change Orders, and partial payment estimates. All of these documents shall be subject to funding agency approval.

6. Prior to the advertisement for bids, the ENGINEER will provide for each construction contract the required number of detailed drawings, specifications, and contract documents for use by the OWNER, appropriate Federal, State, and local agencies from whom approval of the project must be obtained. The cost of such drawings, specifications, and contract documents shall be included in the basic compensation paid to the ENGINEER.
7. The ENGINEER will furnish additional copies of the drawings, specifications and contract documents as required by prospective bidders, material suppliers, and other interested parties, but may charge them for the reasonable cost of such copies. Upon award of each contract, the ENGINEER will furnish to the OWNER five sets of the drawings, specifications and contract documents for execution. The cost of these sets shall be included in the basic compensation paid to the ENGINEER. Original documents, survey notes, tracings, and the like, except those furnished to the ENGINEER by the OWNER, are and shall remain the property of the ENGINEER.
8. The drawings prepared by the ENGINEER described above shall be in sufficient detail to permit the actual location of the proposed improvements on the ground. The ENGINEER shall prepare and furnish to the OWNER without any additional compensation, three copies of a map(s) showing the general location of needed construction easements and permanent easements and the land to be acquired. Property surveys, property plats, property descriptions, abstracting and negotiations for land rights shall be accomplished by the OWNER, unless the OWNER requests, and the ENGINEER agrees to provide those services. In the event the ENGINEER is requested to provide such services, the ENGINEER shall be additionally compensated as set out in Section _____ hereof.
9. The ENGINEER will attend the bid opening and tabulate the bid proposals, make an analysis of the bids, and make recommendations for awarding contracts for construction.
10. The ENGINEER will review and approve, for conformance with the design concept, any necessary shop and working drawings furnished by contractors.
11. The ENGINEER will interpret the intent of the drawings and specifications to protect the OWNER against defects and deficiencies in construction on the part of the contractors. The ENGINEER will not, however, guarantee the performance by any contractor.
12. The ENGINEER will establish baselines for locating the work together with a suitable number of benchmarks adjacent to the work as shown in the contract documents.
13. The ENGINEER will provide general engineering review of the work of the contractors as construction progresses to ascertain that the contractor is conforming with the design concept.
14. Unless notified by the OWNER in writing that the OWNER will provide for resident inspection, the ENGINEER will provide resident construction inspection. The ENGINEER'S undertaking hereunder shall not relieve the contractor of contractor's obligation to perform the work in conformity with the drawings and specifications and in a workmanlike manner; shall not make the ENGINEER an insurer of the contractor's performance; and shall not impose upon the ENGINEER any obligation to see that the work is performed in a safe manner.
15. The ENGINEER will cooperate and work closely with funding agency(ies) representatives.
16. The ENGINEER will review the contractor's applications for progress and final payment

and, when approved, submit same to the OWNER for payment.

17. The ENGINEER will prepare necessary contract change orders for approval of the OWNER, funding agency(ies), and others on a timely basis.
18. The ENGINEER will make a final review prior to the issuance of the statement of substantial completion of all construction and submit a written report to the OWNER and funding agency(ies). Prior to submitting the final pay estimate, the ENGINEER shall submit a statement of completion to and obtain the written acceptance of the facility from the OWNER and funding agency(ies).
19. The ENGINEER will provide the OWNER with one set of reproducible record (as-built) drawings, and two sets of prints at no additional cost to the OWNER. Such drawings will be based upon construction records provided by the contractor during construction and reviewed by the resident inspector and from the resident inspector's construction data. The final design and as-built plans (if there is significant deviation from the final design plan) shall be in an AutoCAD Drawing File Format (DWG), referenced to the appropriate (North or South) Kentucky State Plane Coordinate System (NAD83-Survey Feet) or the Kentucky Single State Plan Coordinate System (NAD83-Survey Feet) on a Compact Disc (CD).
20. If State statutes require notices and advertisements of final payment, the ENGINEER shall assist in their preparation.
21. The ENGINEER will be available to furnish engineering services and consultations necessary to correct unforeseen project operation difficulties for a period of one year after the date of statement of substantial completion of the facility. This service will include instruction of the OWNER in initial project operation and maintenance but will not include supervision of normal operation of the system. Such consultation and advice shall be furnished without additional charge except for travel and subsistence costs. The ENGINEER will assist the OWNER in performing a review of the project during the 11th month after the date of the certificate of substantial completion.
22. The ENGINEER shall be responsible for the technical accuracy of its services, and the documents resulting there from, and acknowledge and agree that the OWNER shall not be responsible for discovering deficiencies therein.

SECTION B - COMPENSATION FOR ENGINEERING SERVICES

One of the following methods for compensation may be used.

1. Percentage of Construction Methods

- A. The OWNER shall compensate the ENGINEER for preliminary engineering services in the sum of \$_____ Dollars (\$_____) after the review and approval of the preliminary engineering report by the OWNER and project funding agency(ies).
- B. The OWNER shall compensate the ENGINEER for design and contract administration engineering services in the amount of: _____ Dollars (\$_____) as shown in the attached Schedule of Engineering Fees.
- C. The compensation for preliminary engineering services, design and contract administration services shall be payable as follows:

1. A sum which equals seventy percent (70%) of the total compensation payable under this Section after completion and submission of the construction drawings, specifications, cost estimates, and contract documents, and the acceptance of same by OWNER and funding agencies.
2. A sum which, together with the compensation provided in Section C, 1, equals eighty percent (80%) of the total compensation payable immediately after the construction contracts are awarded.
3. A sum equal to fifteen percent (15%) of the compensation will be paid on a monthly basis for general engineering review of the contractor's work during the construction period on percentage ratios identical to those approved by the ENGINEER as a basis upon which to make partial payments to the contractor(s). However, payment under this paragraph and of such additional sums as are due the ENGINEER by reason of any necessary adjustments in the payment computations will be in an amount so that the aggregate of all sums paid to the ENGINEER will equal ninety-five (95%) of the compensation. A final payment to equal 100 percent shall be made when it is determined that all services required by this Agreement have been completed except for the services set forth in Section D hereof.

2. Lump Sum option

- A. OWNER shall pay ENGINEER for all services performed or furnished by ENGINEER, as listed in this Agreement, with the exception of Resident Inspection services, as follows:
 1. For the following Preliminary Engineering Services:
the Lump Sum amount of _____ Dollars
(\$_____)
 2. For all Design and associated Contract Administration Services, specified as follows: (excluding the services of the Resident Inspection Services):
the Lump Sum amount of _____ Dollars
(\$_____)
 3. The Lump Sum compensation for services performed or furnished under Item A 1 and A 2, immediately above, shall be payable as follows:
 - a. A sum which equals 50 percent of the total Lump Sum compensation shall be payable after the Final Design Phase documents are completed and submitted to OWNER and funding agency(ies) and approved by DOW.
 - b. A sum which, together with the compensation provided under Item 3 a, immediately above equals 70 percent of the total Lump Sum compensation shall be payable after Final Design Phase Services are considered complete as approved by DOW and defined in (list Exhibit or items).
 - c. A sum, which, together with the compensation for services paid in Item a and b, immediately above, equals 80 percent of the Lump Sum

compensation shall be payable immediately after Contracts for Work are awarded.

- d. A sum equal to 15 percent of the Lump Sum compensation payable under services *(list)*, will be paid for general engineering review of the Contractor's Work during the construction period on percentage ratios identical to those approved by the ENGINEER as a basis upon which to make partial payments to the CONTRACTOR(s). Payments will be made on a monthly basis. However, payment under this paragraph and of such additional sums as are due the ENGINEER by reason of any necessary adjustments in the payment computations will be in an amount so that the aggregate of the sums paid to the ENGINEER for all services will equal 95 percent of the Lump Sum amount.
 - e. A final payment which, together with the compensation for all services paid in Items a through d, immediately above, equals 100 percent of the Lump Sum compensation shall be payable when it is determined that all services required have been completed. Such payment includes payment for Post-Construction Phase services. ENGINEER remains responsible to OWNER for the technical adequacy and completeness of such services.
- B. *Period of Service.* The compensation amount stipulated in this Section is conditioned on a period of service not exceeding _____ months. Should such period of service be extended, the compensation amount for ENGINEER's services shall be appropriately adjusted.
- C. *Payments Upon Termination.* In the event of termination at any time during the performance of the Basic Services for which the ENGINEER's compensation is identified in this Section the ENGINEER shall be paid through the Effective Date of Termination according to the portion of services rendered.
- C. *Construction Cost Limit.* If Section A of the Agreement is amended, ENGINEER shall so modify the Contract Documents thereunder without an increase in compensation for Basic Services.

SECTION C - COMPENSATION FOR RESIDENT INSPECTION

When the ENGINEER provides resident inspection, the ENGINEER will, prior to the pre-construction conference, submit a resume of the resident inspector's qualifications, anticipated duties and responsibilities for approval by the OWNER and the funding agency(ies). The OWNER agrees to pay the ENGINEER for such services in accordance with the Schedule of Engineering Fees. The ENGINEER will render to OWNER for such services an itemized bill, once each month, for compensation for such services performed hereunder during such period, the same to be due and payable by the OWNER to the ENGINEER on or before the 10th day of the following period.

Under normal construction circumstances, and for the proposed construction period of _____ days, the cost of resident inspection is estimated to be \$_____.

SECTION D - ADDITIONAL PROFESSIONAL SERVICES

In addition to the services listed previously, the following services may be provided UPON PRIOR WRITTEN AUTHORIZATION OF THE OWNER and written approval of the funding agency(ies).

1. Site surveys for water treatment plants, sewage treatment works, dams, reservoirs, and other similar special surveys as may be required.
2. Laboratory tests, well tests, borings, specialized geological, soils, hydraulic, or other studies recommended by the ENGINEER.
3. Property surveys, detailed description of sites, maps, drawings, or estimates related thereto; assistance in negotiating for land and easement rights.
4. Necessary data and filing maps for water rights, water adjudication, and litigation, including fees for legal services (see Schedule of Fees attached).
5. Redesigns ordered by the OWNER after final plans have been accepted by the OWNER and the funding agency(ies), except redesigns to reduce the project cost to within the funds available.
6. Appearances before courts or boards on matters of litigation or hearings related to the project.
7. Preparation of environment impact assessments or environmental impact statements.
8. Performance of detailed staking necessary for construction of the project in excess of the control staking set forth in Section A, 12, above.
9. Operation and maintenance manual for facilities.
10. If value engineering (review engineering) is required or sought for a project at the discretion of the OWNER or funding agency(ies), a separate contract shall be negotiated between the OWNER and the selected value engineering firm.

When authorized to proceed in writing by the OWNER, the ENGINEER will:

- a. Retain a firm to perform the required value engineering review of the project.
 - b. Conduct a value engineering workshop
 - c. Provide a written response to each of the recommendations developed by the value engineering team.
 - d. Revise the construction plans and specifications as required to implement the selected value engineering recommendations.
11. When authorized in writing by the OWNER, the ENGINEER will prepare a use ordinance and user charge system/ordinance based on actual customer use and in compliance with DOW guidelines including:
 - a. Review of current operating records, current revenues, and customer classifications.
 - b. Projection of operation, maintenance and replacement (OM&R) costs associated with the proposed treatment and collection or distribution system.

- c. Development of user charge alternatives that will sufficiently cover cost-of-services.
 - d. Recommend a user charge and prepare final system and ordinance for review by regulatory agencies.
12. When authorized to proceed in writing by the OWNER, the ENGINEER will:
- a. Prepare a Plan of Operation in compliance with DOW guidelines to be submitted with the plans and specifications.
 - b. Prepare the final plan of operation no later than 45 days prior to the submission of the 50% milestone of the pay request.
 - c. Prepare the final plan of operation no later than 45 days prior to the submission of the 50 percent milestone of the FAWRF pay request.
 - d. Provide _____ () copies of the Preliminary Plan of Operation to the OWNER and DOW.
 - e. Provide _____ () copies of the Final Plan of Operation to the OWNER and DOW.
 - f. Prepare an O&M Manual in compliance with DOW guidelines to serve as a basic reference tool for operator training and plant O&M and furnish _____ () draft copies for review by the OWNER and DOW; and furnish _____ () copies of the final manual to the OWNER upon completion of the of all reviews.

SECTION E – OWNER RESPONSIBILITIES

OWNER shall have the responsibilities set forth herein:

- A. Provide ENGINEER with all criteria and full information as to OWNER's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which OWNER will require to be included in the Drawings and Specifications; and furnish copies of OWNER's standard forms, conditions and related documents for ENGINEER to include in the Bidding Documents, when applicable.
- B. Furnish to ENGINEER any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Project Site.
- C. Following ENGINEER's assessment of initially-available Project information and data, upon ENGINEER's request, furnish or otherwise make available such additional Project related information and data as is reasonably required to enable ENGINEER to complete its Basic and Additional services. Such additional information or data would generally include the following:
 - 1. property descriptions;
 - 2. zoning, deed and other land use restrictions;
 - 3. property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points;

4. data prepared by or services of others, including without limitation explorations and tests of subsurface conditions at or contiguous to the Site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, or hydrographic surveys, with appropriate professional interpretation thereof;
 5. environmental assessments, audits, investigations and impact statements, and other relevant environmental or cultural studies as to the Project, the site and adjacent areas; and
 6. data or consultations as required for the Project but not otherwise identified in the Agreement or the Exhibits thereto.
- D. Give prompt written notice to ENGINEER whenever OWNER observes or otherwise becomes aware of a Hazardous Environmental Condition or of any development that affects the scope or time of performance of ENGINEER's services, or any defect or nonconformance in ENGINEER's services or in the work of any Contractor.
 - E. Furnish as appropriate other services or direct ENGINEER to provide Additional Services as set forth in Section _____ or Exhibit _____ of the Agreement as required.
 - F. Arrange for safe access to and make all provisions for ENGINEER and ENGINEER's Consultants to enter upon public and private property as required for ENGINEER to perform services under the Agreement.
 - G. Examine all alternate solutions, studies, reports, sketches, drawings, specifications, proposals and other documents presented by ENGINEER (including obtaining advice of an attorney, insurance counselor and other consultants as OWNER deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.
 - H. Obtain reviews, approvals and permits from all governmental authorities having jurisdiction to approve all Phases of the Project designed or specified by ENGINEER and such reviews, approvals and consents from others as may be necessary for completion of each Phase of the Project.
 - I. Provide, as required for the Project:
 1. accounting, bond and financial advisory, independent cost estimating and insurance counseling services;
 2. legal services with regard to issues pertaining to the Project as OWNER requires, Contractor raises, or ENGINEER reasonably requests;
 3. such auditing services as OWNER requires to ascertain how or for what purpose Contractor has used the moneys paid; and
 4. placement and payment for advertisement for Bids in appropriate publications.
 - J. Advise ENGINEER of the identity and scope of services of any independent consultants employed by OWNER to perform or furnish services in regard to the Project, including, but not limited to, application development and project administration, cost estimating, project peer review, value engineering and constructability review.
 - K. Furnish to ENGINEER data as to OWNER's anticipated costs for services to be provided by others for OWNER so that ENGINEER may make the necessary calculations to develop and periodically adjust ENGINEER's opinion of Total Project Costs.

- L. If Resident Project Representative services are not provided pursuant to Section _____ or otherwise, provide a representative to observe the progress and quality of the Work.
- M. If OWNER designates a construction manager, an individual or entity other than, or in addition to, ENGINEER to represent OWNER at the site, define and set forth Section _____ or Exhibit _____ the duties, responsibilities and limitations of authority of such other party and the relation thereof to the duties, responsibilities and authority of ENGINEER.
- N. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings and Substantial Completion, final payment, and warranty inspections.
- O. Provide the services of an independent testing laboratory to perform all inspections, tests and approvals of samples, materials and equipment required by the Contract Documents, or to evaluate the performance of materials, equipment and facilities of OWNER, prior to their incorporation into the Work, with appropriate professional interpretation thereof;
- P. Provide inspection or monitoring services by an individual or entity other than ENGINEER (and disclose the identity of such individual or entity to ENGINEER) as OWNER determines necessary to verify:
 - 1. that Contractor is complying with any Laws or Regulations applicable to Contractor's performing and furnishing the Work; or
 - 2. that Contractor is taking all necessary precautions for safety of persons or property and complying with any special provisions of the Contract Documents applicable to safety.

SECTION F – RESPONSIBILITIES OF THE ENGINEER'S RESIDENT INSPECTOR

When authorized to proceed in writing by the OWNER, the ENGINEER will furnish (*number*) resident inspector(s) for the time specified in the Contract Documents, who will be directed by the ENGINEER to provide reports on progress of the work and on the contractor's compliance or noncompliance with the Contract terms through on-site observation of the work. The performance of these services shall not make the ENGINEER responsible for the contractor's construction methods or procedures or safety precautions or programs incident thereto. The Resident Inspector will:

- 1. Coordinate the establishment of the necessary lines and grades which are to be furnished by the construction contractor.
- 2. Visually inspect and approve or reject materials, equipment, and supplies to be delivered to the site of work.
- 3. Observe the contractor's work with respect to quality, suitability and conformance with the Contract requirements, and provide prompt notice to OWNER of any defects or failure on the part of contractor to conform to the Contract requirements.
- 4. Keep records of construction and installation progress.

5. Make measurements and prepare monthly and final payment computations for work done by the construction contractor.
6. Review maintenance and operation instructions and parts list which the construction contractor submits in compliance with the Contract Documents.
7. Receive, process and handle shop drawings filed at the PROJECT site.
8. Assist the OWNER in preparing for inspection and progress reviews by regulatory agencies.
9. Review reports of testing laboratories.
10. Make a final technical inspection of the PROJECT in company with the OWNER'S representative.

SECTION G – LIABILITY INSURANCE

- A. ENGINEER shall procure and maintain insurance as set forth in Exhibit , "Insurance.
- B. OWNER shall procure and maintain insurance as set forth in Exhibit G, "Insurance." OWNER shall cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds on any general liability or property insurance policies carried by OWNER which are applicable to the Project.
- C. OWNER shall require Contractor to purchase and maintain general liability and other insurance as specified in the Contract Documents and to cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds with respect to such liability and other insurance purchased and maintained by Contractor for the Project.
- D. All policies of property insurance shall contain provisions to the effect that ENGINEER's and ENGINEER's Consultants' interests are covered and that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder.
- E. OWNER and ENGINEER shall each deliver to the other certificates of insurance evidencing the coverages indicated in Section ____ or Exhibit _____. Such certificates shall be furnished prior to commencement of ENGINEER's services and at renewals thereafter during the life of the Agreement.
- F. At any time, OWNER may request that ENGINEER, at OWNER's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If so requested and if commercially available, ENGINEER shall obtain, and shall require ENGINEER's Consultants to obtain such additional insurance coverage, increased limits, or revised deductibles for such periods of time as requested by OWNER, and Exhibit G will be supplemented to incorporate these requirements.

SECTION H – SCHEDULE AND PERFORMANCE CLAUSE

The services called for in this Agreement shall be completed and the report submitted within _____ calendar days from the date of authorization to proceed. After acceptance by the OWNER and funding agency(ies) of the Preliminary Engineering Report and upon written authorization from the OWNER, the ENGINEER will complete final plans,

specifications and contract documents and submit for approval of the OWNER, funding agency(ies) and all State regulatory agencies within _____ calendar days from the date of authorization unless otherwise agreed to by both parties.

If the above is not accomplished within the time period specified, this Agreement may be terminated by the OWNER. The time for completion will be extended by the OWNER for a reasonable time if completion is delayed due to unforeseeable causes beyond the control and without the fault or negligence of the ENGINEER

The obligation to provide further services under this Agreement may be terminated:

1. For cause,
 - a. by either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.
 - b. by ENGINEER:
 - 1) upon seven days written notice if ENGINEER believes that ENGINEER is being requested by OWNER to furnish or perform services contrary to ENGINEER's responsibilities as a licensed professional; or
 - 2) upon seven days written notice if the ENGINEER's services for the Project are delayed or suspended for more than ninety days for reasons beyond ENGINEER's control.
 - 3) ENGINEER shall have no liability to OWNER on account of such termination.
 - c. Notwithstanding the foregoing, this Agreement will not terminate as a result of such substantial failure if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.
2. For convenience, by OWNER effective upon the receipt of notice by ENGINEER.

The terminating party may set the effective date of termination at a time up to 30 days later than otherwise provided to allow ENGINEER to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

SECTION I - INTEREST ON UNPAID SUMS

If OWNER fails to make any payment due ENGINEER within 60 days for services and expenses and funds are available for the project then the ENGINEER shall be entitled to interest at the rate of _____ percent per annum from said 60th day, not to exceed an annual rate of 12 percent.

SECTION J - SPECIAL PROVISIONS

This section may contain: schedule of benchmarks/due dates; definition of terms, or explanation of specific sections of the contract.

SECTION K - APPROVAL BY FUNDING AGENCY(IES)

This Agreement shall not become effective until approved by funding agency(ies). Such approval shall be evidenced by the signature of a duly authorized representative of funding agency(ies) in the space provided at the end of this Agreement. The approval so evidenced by funding agency(ies) shall in no way commit funding agency(ies) to render financial assistance to the OWNER and is without liability for any payment hereunder, but in the event such assistance is provided, approval shall signify that the provisions of this Agreement are consistent with the requirements of funding agency(ies).

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate on the respective dates indicated below.

OWNER: _____

By _____

Type Name _____ Title _____

Attest _____ Date _____

Type Name _____ Title _____

(SEAL) ENGINEER: _____

By _____

Type Name _____

ATTEST _____ Date _____

Type Name _____ Title _____

APPROVED: FUNDING AGENCIES

By _____

Type Name _____ Date _____

Title _____

INTERIM AGREEMENT

(For use only when OWNER is not legally organized on the date the Agreement for Engineering Services is executed.)

In lieu of the execution of the foregoing Agreement for Engineering Services dated the

_____ day of _____, 19 __, by the party designated as OWNER therein, the undersigned, hereinafter referred to as INTERIM PARTIES, have executed this Interim Agreement in consideration of the services described in Section _____ of said Agreement for Engineering Services to be performed by the ENGINEER, and the ENGINEER agrees to accept this Interim Agreement as evidenced by ENGINEER'S execution hereof contemporaneously with the execution of the Agreement for Engineering Services. The ENGINEER also agrees to perform the services set forth in Section _____ of said Agreement in consideration of the sum stated in Section _____ of said Agreement to be paid in the manner set forth therein.

It is anticipated that the OWNER shall promptly become a legal entity with full authority to accept and execute said Agreement for Engineering Services and that the OWNER, after becoming so qualified, shall promptly take such action necessary to adopt, ratify, execute, and become bound by the Agreement for Engineering Services. The ENGINEER agrees that upon such due execution of the Agreement for Engineering Services by the OWNER, the INTERIM PARTIES automatically will be relieved of any responsibility or of liability assumed by their execution of this Interim Agreement, and that the ENGINEER will hold the OWNER solely responsible for performance of the terms and conditions imposed upon the OWNER by the Agreement for Engineering Services, including the payment of all sums specified in Section _____ of said Agreement.

If the OWNER is not legally organized, or if after being duly organized it fails or refuses to adopt, ratify, and execute the Agreement for Engineering Services within 30 days from the date it becomes legally organized and qualified to do so, or if for any other reason the project fails to proceed beyond the preliminary stage described in Section _____ of said Agreement, the INTERIM PARTIES agree to pay ENGINEER for such preliminary engineering services, an amount not to exceed the sum specified therefore in Section _____ of said Agreement.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate this _____ day of _____, _____.

OWNER _____

ENGINEER _____

Required Fee Schedule

TABLES FOR CONSULTING ENGINEERING FEES FOR WATER AND WASTEWATER PROJECTS IN KENTUCKY

Tables I and II define the fees for Professional Engineering Services and Resident Project Representatives respectively. These tables are calculated as a percentage of project construction cost, as determined by project bids. The table is to be utilized in establishing applicable fees for professional engineering services for all water and wastewater projects in Kentucky which may involve federal and/or state funding. Note: Schedules are identical to those used by the Rural Utilities Service, Rural Development Administration, USDA. Note: Tables I and II do not pertain to fees involved in preparation of preliminary engineering reports or additional engineering services. Fees for preparation of preliminary engineering report(s) and additional professional services are subject to negotiation between the engineer, the owner, subject to approval by the funding agency(ies). Typical additional professional services are included after the tables below.

TABLE I – FEES FOR BASIC DESIGN SERVICES

These fees shall pertain to projects requiring complex or detailed engineering design. This will include sewage treatment plants, sewage collection systems, sewage lift stations, water treatment plants, water distribution mains and appurtenances, water pump stations, water storage facilities and renovations of water and sewer facilities.

<u>NET CONSTRUCTION COST</u>	<u>PERCENTAGE FEE</u>
\$	%
100,000	13.00
200,000	11.20
300,000	10.25
400,000	9.70
500,000	9.30
600,000	8.98
700,000	8.70
800,000	8.45
900,000	8.25
1,000,000	8.10
2,000,000	7.15
3,000,000	6.72
4,000,000	6.40
5,000,000	6.25
6,000,000	6.15
7,000,000	6.05
8,000,000	5.95
9,000,000	5.90

Fees for less complex projects such as light industrial buildings, roads, streets, storm drains 24 inches and larger, and appurtenances related thereto shall be 85% of the above Table I percentages. Surveys for design such as topography, profiles, cross sections, and soundings (not to exceed six feet in depth) to estimate the amount of rock excavation are included in the basic service instead of being classified as additional services.

TABLE II – FEES FOR RESIDENT INSPECTION SERVICES

<u>NET CONSTRUCTION COST</u>	<u>PERCENTAGE FEE</u>
\$	%
100,000	12.00
200,000	9.40
300,000	7.80
400,000	7.00
500,000	6.40
600,000	5.80
700,000	5.40
800,000	5.00
900,000	4.80
1,000,000	4.60
2,000,000	3.60
3,000,000	3.00
4,000,000	2.70
5,000,000	2.50
6,000,000	2.32
7,000,000	2.20
8,000,000	2.12
9,000,000	2.05

NOTE: Add two percent to the above Table II percentages for the first \$1,000,000 cost of treatment facilities. Add one percent to the above percentages for all over \$1,000,000 cost of treatment facilities.

GENERAL INFORMATION FOR BASIC AND RESIDENT PROJECT REPRESENTATIVE FEES

The Resident Project Representative will maintain a daily log in the identical manner as required by funding agency(ies). Compensation for construction costs between the values listed in the schedule should be determined by interpolation. If a project is divided into units and all units are authorized for design at the same time, the compensation will be determined by adding together the cost of the construction of the various units and applying the table to the sum of these costs. The initial construction award amount will set the fee percent for the project (change orders shall not adjust the fee percent). For construction inspection, the initial percent times the revised construction cost will create an up-set figure not to be exceeded. If remaining funds are used and additional construction is rebid, the project shall be treated as a new project with new fee percentages.

OWNER _____	ENGINEER _____
TITLE _____	TITLE _____
DATE _____	DATE _____

TYPICAL ADDITIONAL PROFESSIONAL SERVICES

Tables I and II do not pertain to fees for preparation of preliminary engineering reports and additional professional services. Fees for preparation of preliminary engineering report(s) and additional professional services are to be negotiated with the service provider and the owner, and subject to approval by the funding agency(ies).

Below is a listing of 'typical' additional professional services.

- Site surveys for water treatment plants, sewage treatment works, dams, reservoirs, and other similar special surveys as may be required.
- Laboratory tests, well tests, borings, specialized geological, soils, hydraulic, or other studies recommended by the ENGINEER.
- Property surveys, detailed description of sites, maps, drawings, or estimates related thereto; assistance in negotiating for land and easement rights.
- Necessary data and filing maps for water rights, water adjudication, and litigation.
- Redesigns ordered by the OWNER after final plans have been accepted by the OWNER and the funding agency(ies), except redesigns to reduce the project cost to within the funds available.
- Appearances before courts or boards on matter of litigation or hearings related to the project.
- Preparation of environmental assessments or environmental impact statements.
- Performance of detailed staking necessary for construction of the project, in excess of the control staking set forth in Section _____.
- Operation and maintenance manual for facilities.
- Value engineering.
- Preparation of a use ordinance and user charge system/ordinance based on actual customer use and in compliance with the DOW and/or other required guidelines.
- Archeological surveys
- Biological surveys
- Legal services

• **Standard Preliminary Engineering Report**

The following format must be followed in preparing a preliminary engineering report for any water or wastewater project in Kentucky. The engineer should use judgment in presenting sufficient information in the preparation of the PER, taking into account that different projects require varying levels of detail (lagoons versus mechanical plants, groundwater sources versus surface water treatment, etc.). The level of effort required to prepare the report and the depth of analysis within the report should be proportional to the size and complexity of the proposed project.

- I. EXECUTIVE SUMMARY.** Provide a summary of why the engineering study was undertaken, a brief description of the basic needs or deficiencies of the system being studied, a brief description of the alternatives considered, a brief description of the preferred alternative, the estimated total cost to construct the preferred alternative and the net cost per user based on the proposed funding plan. Note any other pertinent conclusions.

II. PROBLEM DEFINITION

- A. Identify planning area and existing/potential service area.** Using narrative and drawings, describe the area under consideration. The project planning area may be larger than the service area ultimately determined to be economically feasible. The description should include the following information:

1. Location – Indicate legal and natural boundaries, major obstacles, elevations, etc, using maps, photographs, and sketches of the planning area.
2. Physical Characteristics of the Area – Describe the physical character of the project area including geology, topography, soil types, groundwater, surface water, vegetation, etc. that may have an impact on the project costs, performance, simplicity, etc. or allow for a more complete understanding of the problem. Provide a digital map
3. Environmental Resources Present – Complete the Environmental Assessment Checklist (see page 58 of this document). Attach any other exhibits, maps, or correspondence that may be applicable to help identify environmental resources present.
 - Regarding socio-economic/environmental justice issues: If the proposed project will be located in a minority or low-income community, analyze if the location of the proposed project will have, or will be perceived to have, disproportionately high adverse human health or environmental effects to the community. If the project will have no disproportionate effects, this should be stated. If the project will have, or may be perceived to have, disproportionately high or adverse human health or environmental effects to the community, the analysis must include a description of the efforts made to include minority and low-income populations into the NEPA process.
4. Growth Areas and Population Trends – Identify specific areas of concentrated growth. Provide population projections for the project planning area and concentrated growth areas for the project design period. Base population projections on historical records or economic projections, citing recognized sources.

B. Evaluate condition of existing facilities. Describe the condition of the existing facilities:

1. Schematic Layout – Provide a schematic layout for the existing system. The schematic map should provide basic information on the location and size of the components in the system, especially in the case of distribution and collection mains.
2. History – Provide a brief history of the facilities, including when the system was constructed, major improvements and any past problems.
3. Analysis of Existing Facilities – Analyze the system to determine its present condition and ability to meet current and future standards (Safe Drinking Water Act, Clean Water Act, and other federal, state, local or tribal requirements). Are the existing facilities suitable for continued use? Analyze the capacity for future growth. Justify statements regarding the condition of existing facilities by summarizing field studies, flow monitoring, TV inspection, operating records, water quality data, special studies, and citing the source of information. Include pictures if appropriate. Flow and load demands should be based on detailed inventories of system uses, flow monitoring as appropriate, pump station records, water quality sampling, existing records, and reports, and any other means available that documents current and future flows and loads. Flow metering field data should be summarized with a map showing the location of all sampling points. For wastewater projects, provide a copy of the latest comprehensive Performance Evaluation, if available, along with a copy of the MPDES Discharge Permit. Attach copies of water quality tests.

For drinking water systems analyze:

- Water demand
- Adequacy of supply – Address volume and quality, reliability and susceptibility to drought, and capacity for growth.
- Source water protection – Has it been addressed?
- Treatment – Address waste streams and sludge disposal.
- Storage – Address ability to provide adequate storage for domestic and fire demands, condition of storage facilities.
- Pump stations and other infrastructure – Address condition, capacity for future growth.
- Distribution system – Address main size & condition, ability to provide domestic & fire flows, capacity for growth.
- Utilization of water meters
- Operational and management practices and capabilities – Address problems that have been encountered in the operation and maintenance of the system.

For wastewater systems analyze:

- Existing flows
 - Hydraulic and organic loading – Compare the wastewater system loading with current water usage where high hydraulic loading is noted.
 - Treatment standards – Address water quality standards and non-degradation. Are discharge standards met? Address sludge testing and removal.
 - Lift stations
 - Collection system – Address main capacity and main slopes.
 - Impact of infiltration or inflow on system performance
 - Operational and management practices and capabilities – Address problems that have been encountered in the operation and maintenance of the system.
4. Financial Status of Facilities – Provide information regarding rate schedules, annual operating and maintenance (O&M) cost, tabulation of users by monthly usage

categories and revenue received for last three fiscal years. Give status of existing debts and required reserve accounts.

C. Describe and document the need for the project and the problems to be solved. Describe the need for the project in the following order of priority:

1. Health and Safety – Describe concerns, compliance issues, and relevant regulations (both existing and anticipated) such as Safe Drinking Water Act, Clean Water Act, and other federal, state, local requirements. Attach correspondence to/from federal, and state regulatory agencies. Attach documentation such as violation of discharge permits, notice of violations, administrative orders, or boil orders.
2. System O&M – Describe O&M concerns with emphasis on those with the greatest impact. Discuss operational, administrative and management capacity. Describe the duration of the problem, and the operation and management steps that have been taken to remedy the situation. If steps have been recommended as part of a Comprehensive Performance Evaluation or other regulatory agency review and the recommended actions have not been instituted, provide discussion as to why the actions have not been instituted.
3. Growth – Describe the system capacity that is necessary to meet needs during the planning period. Discuss any consideration given to designing for phased construction. Provide number of new users to be served by this project.
4. Unresolved Problems – Describe any of the problems identified above that are not to be addressed and the reasons for not addressing them. Discuss phasing if applicable.

D. General Design Requirements for Improvements. Describe the general design requirements that will need to be met in discussing the potential alternatives to remedying the system's problems.

For drinking water projects address:

- Design Standards for Water Works
- Regulatory requirements and permits
- Source(s) of water supply (quantity/quality/reliability/water rights)
- Source water protection
- Water use/demand data (average day, maximum day, peak hourly, fire flow)
- Treatment
- Pumping
- Transmission/distribution
- Storage
- Water meters/conservation
- Water system wastes (treatment/handling/disposal/re-use)

For wastewater projects address:

- Design Standards for Wastewater Facilities
- Existing and design flows
- Hydraulic and organic loading
- Regulatory requirements and permits
- Treatment
- Collection
- Pump stations
- Sludge

- III. ALTERNATIVE SCREENING PROCESS.** Cite and describe all available alternatives to remedy the problems to be solved, including the no action alternative. Briefly discuss any alternative that is not to be discussed further in Section IV. Alternative Analysis, noting why the alternative is obviously not suitable for further consideration. A sound justification is required for eliminating an alternative. This section documents that an option was not overlooked, but rather was considered and ruled out as a viable option during the early stages of the planning process. If a system is required to remedy a problem, such as having an administrative order, the “no action” alternative can be briefly discussed and eliminated in this section. All alternatives that are not eliminated in the screening process should be evaluated in Section IV. Alternative Analysis.
- IV. ALTERNATIVE ANALYSIS.** Address items A through J for each alternative not eliminated in Section III, Alternative Screening Process.

For drinking water projects address:

- Supply or source alternatives – Describe new supply alternatives, rehabilitating existing supply or source, water rights, etc..
- Distribution system alternatives (main size & routing alternatives, material alternatives)
- Storage alternatives (tank or reservoir types and locations)
- Fire protection alternatives (main size & routing, building sprinkler systems)
- Pump stations & other infrastructure alternatives (options to increase capacity, pump types, etc.)
- Treatment alternatives – Describe the various treatment alternatives being proposed including ability to meet regulations, treatment efficiency and O&M requirements. Address waste streams and sludge disposal.
- Controls and Telemetry
- Project site alternatives
- Potential for regionalization

For wastewater projects address:

- Collection system alternatives (main size & routing alternatives, material alternatives)
- Lift stations & other infrastructure alternatives (options to increase capacity, pump types, etc.)
- Treatment alternatives – Describe the various treatment alternatives being proposed including ability to meet regulations, treatment efficiency, discharge, and O&M requirements. Address sludge testing and removal.
- Controls and Telemetry
- Project site alternatives

- A. Description.** Describe the alternative technology that could be used to remedy a problem.
- B. Schematic Layout.** Provide a schematic layout for the alternative. For wastewater collections systems provide general elevations. For water systems provide elevations of source, pressure zones and water tank overflow and operating levels.
- C. Operational Requirements.** Discuss the operational skill involved or new operational duties resulting from a given alternative. Discuss manpower requirements.
- D. Energy Requirements.** Discuss energy consumption.
- E. Regulatory Compliance and Permits.** Describe how each alternative will bring the system into compliance with appropriate regulations such as Safe Drinking Water Act, Clean Water Act, and other federal, state, or local requirements. Describe and list any permits that will be required to implement each alternative.

- F. Land Requirements.** Identify sites, rights-of-way and easements required. Specify whether these properties are currently owned, to be acquired or leased, and whether options have been obtained contingent upon receipt of funding.
- G. Environmental Considerations.** Discuss any specific impacts that a particular alternative may have beyond those already discussed in II. Problem Definition.
- H. Construction Problems.** Discuss unique concerns such as geological constraints, high water table, limited access, underground storage tanks, contaminated soil, or other conditions that may affect cost of construction or operation of facility. If applicable, discuss any special considerations to keep existing facilities operable during construction. Provide an estimated dollar amount to mitigate such problems.

I. Cost Estimates.

1. Project Costs – (i.e., administrative, financial, engineering, and construction costs) Provide unit costs and basis of estimated costs.
2. Annual O&M Costs – Provide a discussion of the increase or decrease in operation and maintenance requirements associated with the alternative being analyzed. Include increased energy costs in the O&M costs. Provide a line item breakout and basis of O&M costs.
3. Present Worth Analysis – Based on a 6% discount rate, evaluate cost-effectiveness considering capital and O&M costs for a 20-year planning period.

- V. SELECTION OF A PREFERRED ALTERNATIVE.** Provide a comparative analysis of all of the alternatives discussed above. Clearly define the criteria utilized for the comparison of each alternative and consistently apply the criteria to each alternative. At a minimum, the evaluation should take into account technical feasibility, environmental impacts, financial feasibility, public health and safety, operational and maintenance considerations, and public comments. Briefly describe each alternative's ability to: meet the owner's needs within its financial and operational resources, comply with regulatory requirements, be compatible with existing comprehensive area-wide development plans, and satisfy public and environmental concerns. A matrix or spreadsheet should be used to summarize the logic of the selection process.

VI. DETAILED DESCRIPTION OF THE PREFERRED ALTERNATIVE.

- A. Site location and characteristics.** Discuss the site location of any facilities, and the characteristics of the site(s). Provide any drawings or schematics if not previously provided.
- B. Operational requirements.** Discuss the expertise required to operate the facility and any unique requirements of the system.
- C. Impact on existing facilities.** Discuss the impact that the project would have on other system's facilities. For example, impacts that a water system improvement may have on the wastewater system.
- D. Design criteria.** Describe in greater detail the design criteria for the selected alternative.

For drinking water projects address:

- Water Supply – Include requirements for quality and quantity. Describe recommended source, including site.

- Treatment – Describe process in detail and identify location of plant and site of any process discharges.
- Storage – Identify size, type and site location.
- Pumping Stations – Identify size, type, site location and any special power requirements.
- Distribution Layout – Identify general location of line improvements: lengths, sizes and key components.
- Hydraulic Calculations – Provide sufficient information to determine compliance with DEQ design requirements.
- Controls, Monitors, and Telemetry – Discuss the cost effectiveness, technical feasibility and resource benefits of utilizing controls, monitors, and telemetry. If controls, monitors, and telemetry are not proposed for the project, show why they would not be appropriate based on cost effectiveness, technical feasibility and resource benefits.

For wastewater projects address:

- Treatment – Describe process in detail and identify location of plant and site of any discharges. Discuss sludge testing and disposal.
- Pumping Stations – Identify size, type, site location and any special power requirements.
- Collection System Layout – Identify general location of line improvements: lengths, sizes and key components.
- Hydraulic Calculations – Provide sufficient information to determine compliance with DEQ design requirements.

E. Environmental Impacts and Mitigation. Discuss in greater detail the environmental impacts that the selected alternative may have on environmental resources, and any appropriate short and long-term measures necessary to minimize each potentially adverse impact.

F. Cost Summary for the Selected Alternative.

1. Project Cost Estimate – Provide an itemized estimate of total project costs, using the budget format provided.
2. Annual Operating Budget
 - a. Income – Project income realistically. Base projections on user billings, water treatment contracts, and other sources of incomes. Provide a rate schedule. Provide the number of users and estimated cost per user with supporting data. When large agricultural or commercial users are projected, substantiate and evaluate the impact of such users on the economic viability of the project. Where population decreases are anticipated account for potential decrease in income.
 - b. O&M Costs – Project costs realistically. In the absence of other reliable data, base projections on actual costs of other existing facilities of similar size and complexity. Include facts to substantiate O&M cost estimates. Include salaries, wages, taxes, accounting and auditing fees, legal fees, interest, utilities, gasoline, oil and fuel, insurance, repairs and maintenance, supplies, chemicals, office supplies and printing, and miscellaneous.
 - c. Capital Improvements – Describe annual costs of purchasing or replacing equipment, machinery, vehicles, and portions of the system.
 - d. Debt Repayments and Coverage Requirements – Describe existing and proposed project financing from all sources and effect of various scenarios on user fees.

3. Reserves – Describe any reserve requirements including bond and replacement reserves.

VII. RECOMMENDATIONS AND IMPLEMENTATION.

- A. Funding Strategy.** Describe the proposed funding strategy and resultant user costs.
- B. Implementation.** Describe how the project will be implemented and any special concerns regarding implementation. Discuss any recommendations for special studies such as pilot studies, highlighting the need for special coordination, or recommending a plan of action to expedite project development, etc. Provide a project schedule. Include as part of the schedule the time line for obtaining all project funding. Identify any items that have the potential to delay or prevent the project from going forward.
- C. Public Participation.** Describe any public participation, meetings, hearings, or comments received from the public about the PER, environmental concerns, or the proposed project in general.

• Clearinghouse Review Process

For water and sewer projects, the State Clearinghouse review will be done by the following agencies:

Natural Resources & Environmental Protection Cabinet specifically, Division of
Water
Transportation Cabinet
Heritage Council
Labor Cabinet
Health and Human Services Cabinet
House, Building & Construction
Office of Policy and Management
ADDs

Each agency does its individual review and is required to send any comments back to the Clearinghouse within 45 days. An extension of time may be requested by the agency if insufficient information was submitted by the applicant. Therefore, it is important that initial applications be accurate or that an applicant respond immediately to any agency requests for additional information.

With regard to the review done by the Natural Resources & Environmental Protection Cabinet, it is important to note that the review on environmental issues done at this time is not a full NEPA-like review. Rather, it is an environmental compliance check and is not intended to serve as a full Environmental Review.

The NEPA-like review is explained in the next section, and may be done by the applicant at any time in the implementation process. Most applicants elect to wait until after the project gains endorsement from the Clearinghouse before beginning a full Environmental Review.

After agency review of the project and compilation of all comments by the Clearinghouse staff, the applicant will receive notification on whether the project was non-endorsed, conditionally endorsed, or endorsed.

Non-endorsed means that the project will have to be revised, resubmitted and go through the Clearinghouse process again.

Conditional Endorsement means that the project may proceed, but with specific conditions that must be verified to the agency requesting the conditions. These conditions may go beyond the applicable local, State and federal laws governing the project.

Endorsed means the project may proceed with no special conditions.

It should be noted that all projects, regardless of the type of endorsement, must comply with applicable local, State and federal laws. This means that all applicable permits or licenses must be obtained, and all conditions of local, State and federal laws (including reporting) must be followed.

All funding agencies will receive notification of the Clearinghouse determination upon completion of the agency reviews. It is at this point that the funding agencies will communicate with each other to determine which agencies are able to offer dollars to support the project.

- **Environmental Review**

If federal dollars are involved in financing a water or wastewater project, an Environmental Review must be conducted to assess the environmental impacts of the activity.

Federal law states that an Environmental Review “shall consist of a study of the action to identify and evaluate the related environmental impacts.” The process must include a review of any related environmental information to determine whether any significant impacts are anticipated and whether any changes can be made in the proposed action to eliminate significant adverse impacts on the environment.

The Environmental Review may involve a more in-depth study, called an ***Environmental Assessment***. The Environmental Assessment must provide sufficient data and analysis to determine whether an even more detailed study (called an Environmental Impact Statement) will be needed. Most projects will require the less stringent Environmental Assessment.

NOTE:

The two federal agencies involved in water and wastewater projects – USDA’s Rural Development, and HUD’s Community Development Block Grant program – have collaborated on requirements each agency has for Environmental Assessments in order to eliminate the duplication in paperwork that heretofore existed. Applicants will soon be able to utilize one set of documents to comply with environmental review requirements.

The Environmental Review documents will be included in the *Procedures* in the near future.